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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/873,310

06/05/2001

Louis Jacobus Botha

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10/04/2006

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EXAMINER

ABRAHAM, ESAW T

ART UNIT

PAPER NUMBER

2133

DATE MAILED: 10/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/873,310

Applicant(s)

BOTH, LOUIS JACOBUS

Examiner

Esaw T. Abraham

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2133

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-10 and 12-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8 and 14 is/are allowed.
- 6) ☒ Claim(s) 1-2, 4-7, 9, 10, 12-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **RESPONSE TO APPLICANT'S REMARKS**

Applicant's argument, see remark pages 10-26 filed on 07/19/06 with respect to the rejection(s) of claim(s) 1-2, 4-10 and 12-14 under 35 U.S.C. 103(a) as being unpatentable over Lucidarme et al. (U.S. PN 6,675,016) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of 112, 2<sup>nd</sup> paragraph rejection for claims 1,5,6,7,9,10 and 13 and is made.

### **Response to the applicant's amendments**

#### **Drawings**

The corrected drawings were received on 07/19/06. These drawings are acceptable.

#### ***Specification***

In view of the amendment filed on 07/19/06, the examiner withdraws all objections to the specification.

#### ***Claim Rejections – 35 USC § 112(2<sup>nd</sup>)***

In view of the Amendment filed 07/19/06, the examiner withdraws the previous 35 USC § 112 rejections to claims 1,2,5,7,9,10 and 13 in the previous Office Action filed 04/20/06.

#### **Status of Claims**

1. Claims **1-2, 4-7, 9-10 and 12-13** remain pending.  
Claims **3 and 11** are cancelled.

Claims **8 and 14** are allowed.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U. S. C 112

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

2. a) Claims **1, 5, 6, 7, 9, 10 and 13** recite “means for sending a portion of an input data stream and writing at least some of a remaining portion of bits of said input data stream to a memory buffer according to a first interleaving pattern”. It is unclear how the interleaving pattern affects the sending (transmitting) the portion of the input data stream and the writing (storing) the remaining portion of bits to the memory. For example, the input data stream could be transmitted only if the interleaving pattern satisfies certain conditions, or the input data stream could be sent (transmitted) through different channels based on the interleaving pattern in some way.

b) Claims **1, 5, 6, 7, 9, 10 and 13** recite “for sending a portion of an input data stream comprising **every** C<sup>th</sup> bit of the input data stream and for writing at least **some of** a remaining”. This limitation is unclear in meaning because it is impossible to determine the conditions set forth on how many input data stream are sent and written.

3. Claims **1, 5, 6, 7, 9, 10 and 13** are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01.

Claims **1, 5, 6, 7, 9, 10 and 13** recite, “input data stream comprising every C<sup>th</sup> of the input data stream wherein C comprises a number of columns in said memory”.

The omitted structural cooperative relationships are: "every C<sup>th</sup> of the input data stream and a number of columns in said memory". It is unclear how the every C<sup>th</sup> bit of the input data stream related to the number of columns in the memory buffer.

Cooperative structural relationship have omitted from the claim since the C<sup>th</sup> bit with the number of columns can neither be visualized in the drawings nor can be clearly understood from the claimed language for proper examination.

***Examiner's statement for reason for allowance***

4. Claims **8 and 13** have been allowed.

The following is an examiner's statement for allowance:

**As per claim 8:**

The prior art of record, Lucidarme et al. (U.S. PN: 6,675,016) substantially disclose a radio transmission system and a method of transmitting radio signals based on at least one data flow toward a radio communication station (see col. 1, lines 8-12). Lucidarme et al. in figure 3 teach a coding and multiplexing stage (18A) in the direction of transmission from the UTRAN (base station) to a UE (user equipment) (see col. 6, lines 22-30). Lucidarme et al. further in figure 3 teach an interleaving module (26) performs a permutation of the sequence delivered by a module (25) with a view to distributing the symbols pertaining to the TTI over the frames and this interleaving consists in writing the symbols of the sequence successively to the rows of a matrix, comprising columns, in permuting the columns of the matrix, and in then reading the symbols of the matrix column by column to form the sequence denoted, a module (27) then chops the sequence segments of consecutive symbols corresponding to the

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columns of the interleaving matrix after permutation, and respectively assigns these segments to the frames of the TTI to form a sequence denoted for each frame and each  $\text{TrCH } i$  (27) (see col. 7, lines 1-35). However, the prior art taken singly or in combination fail to teach, anticipate, suggest, or render obvious a system for interleaving data in a wireless transmitter comprising a memory buffer; and means for sending downstream a first radio frame from a first portion of an input code block, for storing one or more additional radio frames from a second portion of said input code block in said memory buffer and discarding radio frames from a remaining portion of said input code block, for sending said one or more additional radio frames downstream from said memory buffer, and for causing said input code block to be re-calculated. Consequently, claim 8 is allowed over the prior art.

**As per claim 14:**

The prior art of record, Lucidarme et al. (U.S. PN: 6,675,016) substantially disclose a radio transmission system and a method of transmitting radio signals based on at least one data flow toward a radio communication station (see col. 1, lines 8-12). Lucidarme et al. in figure 3 teach a coding and multiplexing stage (18A) in the direction of transmission from the UTRAN (base station) to a UE (user equipment) (see col. 6, lines 22-30). Lucidarme et al. further in figure 3 teach an interleaving module (26) performs a permutation of the sequence delivered by a module (25) with a view to distributing the symbols pertaining to the TTI over the frames and this interleaving consists in writing the symbols of the sequence successively to the rows of a matrix, comprising columns, in permuting the columns of the matrix, and in then reading the

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symbols of the matrix column by column to form the sequence denoted, a module (27) then chops the sequence segments of consecutive symbols corresponding to the columns of the interleaving matrix after permutation, and respectively assigns these segments to the frames of the TTI to form a sequence denoted for each frame and each TrCH  $i$  (27) (see col. 7, lines 1-35). However, the prior art taken singly or in combination fail to teach, anticipate, suggest, or render obvious a method for interleaving data in a wireless transmitter Comprising: (a) sending downstream a first radio frame from a first portion of an input code block; (b) storing one or more additional radio frames from a second portion of said input code block in a memory buffer and discarding any radio frames in a remaining portion of said of said input code block; (c) reading said one or more additional radio frames from said memory buffer and sending said one or more additional radio frames downstream; and (d) recalculating said input code block and repeating operations (a) through (d) until said radio frames in said remaining portion of said input code block have been sent downstream. Consequently, claim 14 is allowed over the prior art.

### ***Conclusion***

5. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Esaw Abraham whose telephone number is (571) 272-3812. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are successful, the examiner's supervisor, Albert DeCady can be reached on (571) 272-3819. The fax phone numbers

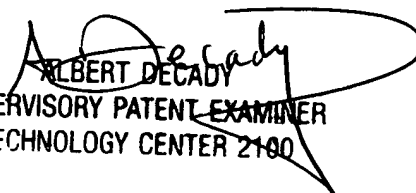
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for the organization where this application or proceeding is assigned are (571) 273-8300.

Information regarding the status of an Application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or PUBLIC PAIR. Status information for unpublished applications is available through Private Pair only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Esaw Abraham

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